

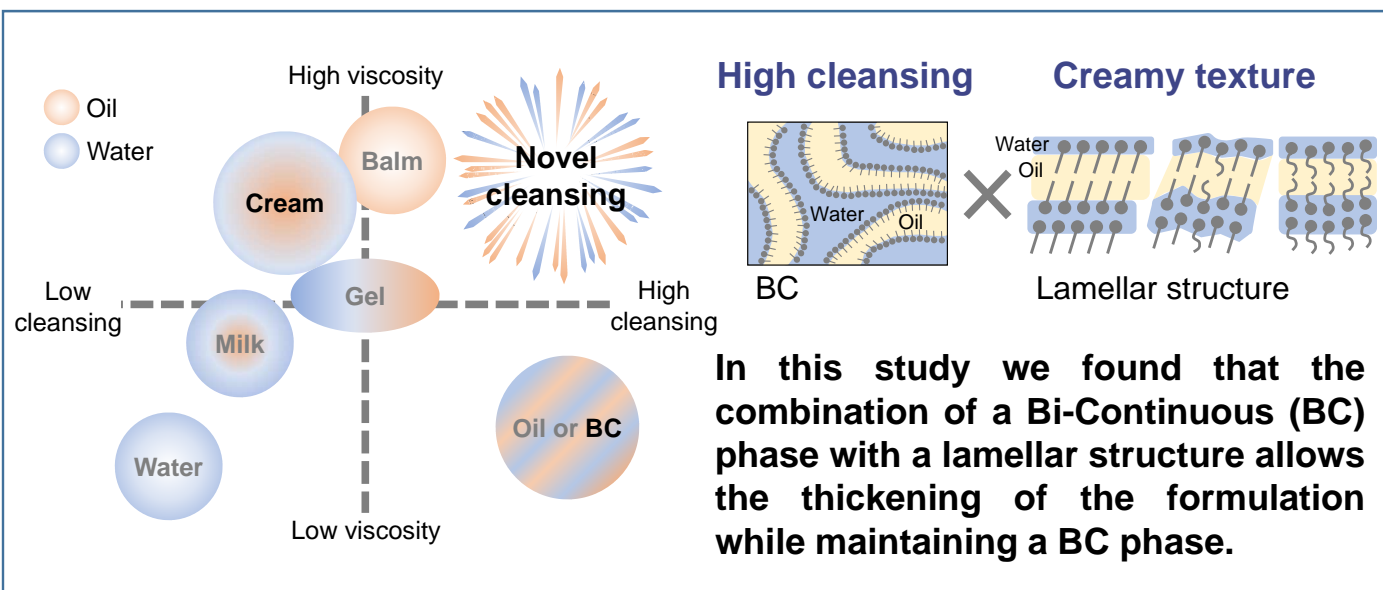
Liquid Crystals promote stability of Bi-Continuous phases for novel texture cleansing products

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Introduction:



Materials & Methods:

Materials

BC phase components

- Polyglyceryl-10 diisostearate
- Polyglyceryl-6 dicaprate

Structural assisting components

- Myristyl alcohol
- Cetyl phosphate neutralized with arginine

Fitting of BC phase

Yellow: oil-soluble pigment
Blue: water-soluble pigment

Thickening region

★: model formulation

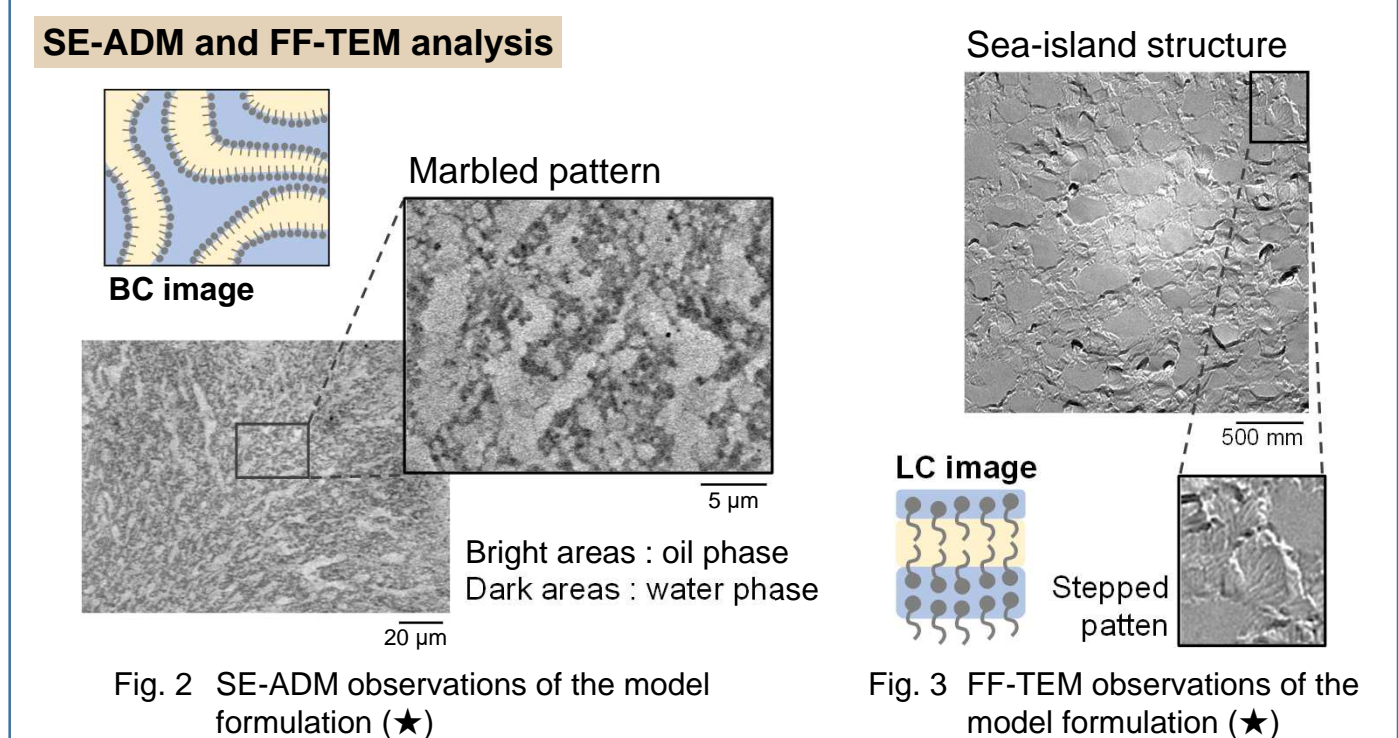
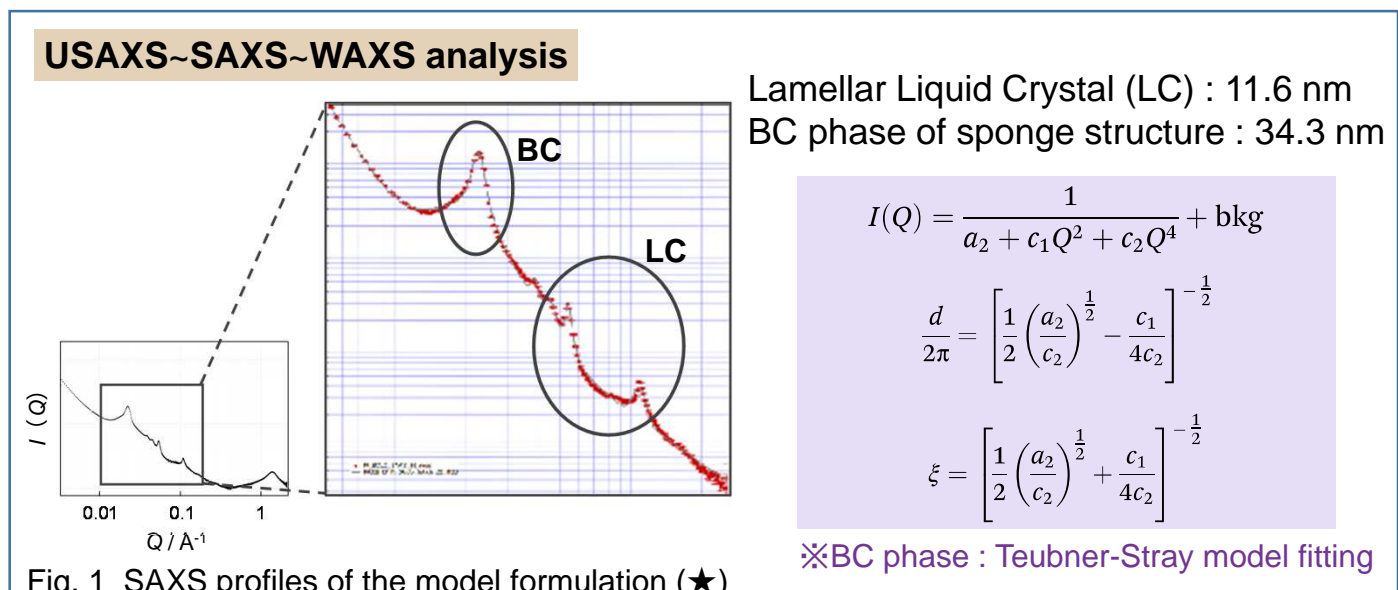
Cetyl ethylhexanoate : water = 1 : 0.7~1

Sample preparation

Evaluation

- Ultra Small, Small and Wide-angle X-ray scattering (USAXS~SAXS~WAXS)
- Freeze fracture transmission electron microscopy (FF-TEM)
- Scanning electron assisted dielectric microscopy (SE-ADM)

Results & Discussion:



BC phase is thickened and stabilized by a LC structure

At an optimized ratio (a low crystallinity (liquid to viscous @r.t.) polyglycerin fatty acid ester (PGFE), a high crystallinity (solid @r.t.) cetyl phosphate neutralized salt and higher alcohol), it is possible to thicken the formulation while maintaining the BC phase. In particular, the BC phase formed by PGFE can be thickened and stabilized by forming a lamellar gel obtained from cetyl phosphate neutralized salt and higher alcohol, thereby creating a feeling of melting.

Conclusions:

There are many cleansing fluids comprising a BC phase, but a creamy preparation was still missing. In this study, we succeeded in thickening a BC phase by combining the interfacial constituents with polyglyceryl-10 diisostearate, polyglyceryl-6 dicaprate, cetyl arginine phosphate, and myristyl alcohol. Furthermore, the thickened BC melts and mixes with makeup when applied to the skin, giving a refreshed feeling after the skin cleaning. It is expected that this new cosmetic system will increase consumer satisfaction.

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